

## REMARKS/ARGUMENTS

Claims 1-26 are pending in the application. Of the above, claims 1, 2, 18-21 and 23-26 were previously withdrawn from consideration and claims 3-17 are rejected.

In the amendment, filed January 26, 2010, Applicant identified claim 22 as "original". However, claim 22 is not part of the elected Group II claims. It appears the identification was in error, and the claim should be identified as "withdrawn". This issue has further been obviated as claim 22 has been cancelled.

Claims 1, 2, 18-21, and 23-26 were withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. However, Applicant's traverse of Group II, claims 3-17 and 26 was found persuasive. Thus, the Group I, claims 1, 2, 23, and 24 and Group II, claims 3-17 and 26, will be considered elected, and claims 18-22 and 25 are withdrawn from consideration. In addition claims 18-22 and 25 have been cancelled. The Office Action states that this application contains claims 18-22 and 25 drawn to an invention nonelected with traverse filed on February 26, 2010. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action. Claims 18-22 and 25 are accordingly cancelled.

Claims 24 and 26 are objected to under 37 CFR 1.75(c) as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant has made the appropriate amendments to place the claims in proper dependent form. Claims 3-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As requested by the Office Action, Applicant has defined the variables in the equation recited in claims 3, 4, and 7 to overcome the 35 U.S.C. 112, 2<sup>nd</sup> paragraph rejection of claims 3-17. Claims 1-17, 23, 24, and 26 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 23 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 24. Claim 23 has been cancelled. Claims 1, 23, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Smyth, U.S. Patent No. 5,687,291 A ("Smyth"). Claim 2 is objected to as being dependent upon a rejected based claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and if rewritten to overcome the rejection(s) under 35 U.S.C. 101 and 35 U.S.C. 112, second paragraph, set forth in this Office Action. Claims 3-17 would be allowable if

rewritten to overcome the rejection(s) under 35 U.S.C. 101 and 35 U.S.C. 112, second paragraph, set forth in this Office Action.

In response to the Office Actions recitation of Allowable Subject matter with respect to claim 2, the subject matter of claim 2 has been amended and incorporated into claim 1 and claim 2 has been cancelled. Independent claims 3, 4 and 7 have been amended, and the amendments to independent claims 3, 4 and 7 in addition to the additional amendments to claim 1 are supported, at the very least, by paragraphs [0146] and [0172] and the additional accompanying disclosure of Applicant's Specification as provided in Applicant's U.S. Patent Application Pub. No. 2006/0135879 A1. No new matter has been added. Applicant has introduced new dependent claims 27, 28, and 29 which are dependent upon amended independent claim 3, which is asserted to be allowable as provided in the remarks that follow, and the subject matter of new dependent claims 27, 28, and 29 is supported by, inter alia, withdrawn independent claims 19, 20, and 21, respectively. Applicant has additionally introduced new system claims 30, 31 and 32, the subject matter of which is supported by, inter alia, amended independent claims 3, 4 and 7, respectively, and new claims 30, 31 and 32 are asserted to be allowable because their subject matter corresponds with amended claims 3, 4 and 7, which are asserted to be allowable as provided in the remarks provided below. The remaining rejections will be addressed in turn below.

In addition, pursuant to paragraphs 6 and 7 of the Office Action, Applicant has amended the specification, page 21 to define the variables in the equation recited in claims 3, 4, and 7. This amendment is fully supported by the original specification, drawings and claims. No new matter has been added. Applicant respectfully requests acceptance of this amendment.

**The Rejection of Claims 1 – 17 under 35 U.S.C. § 101:**

Amended independent claims 1, 3, 4 and 7 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter on the basis that the claim does not transform underlying subject matter such as an article or materials to a different state or thing and additionally is not tied to a particular machine. Applicant respectfully disagrees, because at the very least, amended independent claims 1, 3, 4 and 7 contain method steps which transform the subject matter underlying the claim into a different state or thing. Independent claim 1, as amended, requires, in part, "[a] method for assessing brain state by analysing mammalian brain electroencephalogram (EEG) recordings using an eighth order autoregressive and fifth order

moving average discrete time equation. ... taking a z-transform for said eighth order autoregressive and fifth order moving average discrete time equation to obtain a z-domain equation, determining poles and zeroes in the solution of the z-domain equation; and plotting the poles onto the complex plane and displaying positions of the poles.” Amended independent claims 3, 4 and 7 similarly require assessing mammalian brain waves by obtaining and digitising an electroencephalogram (EEG) from the brain before reciting a series of specific equations and steps which manipulate and transform the EEG data signal and finally displaying the results of the transformed data.

Recently, the Supreme Court in Bilski v. Kappos, held that “[t]he machine-or-transformation test is not the sole test for deciding whether an invention is a patent-eligible ‘process.’” \_\_\_ U.S. \_\_\_, 130 S. Ct. 3218, 177 L. Ed. 2d 792, 803 (U.S. 2010). The Court went on to state that “[t]he machine-or-transformation test may well provide a sufficient basis for evaluating processes similar to those in the Industrial Age -- for example, inventions grounded in a physical or other tangible form[;] [b]ut there are reasons to doubt whether the test should be the sole criterion for determining the patentability of inventions in the Information Age.” Id. Instead, the Court provided that “[i]n searching for a limiting principle, this Court’s precedents on the unpatentability of abstract ideas provide useful tools.” Id. at 805. Thus, the Supreme Court’s decision determined patent eligibility of a process under § 101 on the basis of whether the particular process is anything more than an abstract idea. See Id.

“[A] principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right.” Id. at 806, citing Gottschalk v. Benson, 409 U.S. 63, 67 (1972). The Court went on to cite the holding of Flook for the proposition that simply because a fundamentally abstract idea is limited to a particular industry or a particular technological environment can transform an unpatentable abstract idea into patentable subject matter under § 101. Id. at 806. Specifically, the Court quoted Flook’s holding that “rejected ‘[t]he notion that post-solution activity, no matter how conventional or obvious in itself, can transform an unpatentable principle into a patentable process’”. Id. quoting Parker v. Flook, 437 U.S. 584, 590, 594 (1978).

Unlike the claims at issue and discussed in Bilski, Applicant’s amended 1, 3, 4 and 7 represent patentable subject matter because the limitations of the amended claims do not merely state the concept of assessing brain state, but instead implement the analysis of mammalian brain

waves in a tangible way requiring the performance of steps that are not only observable and verifiable, but also produce a tangible transformation of the underlying subject matter. Specifically, the limitations of the amended claims require applying specific equations to brain electroencephalogram (EEG) recordings, manipulating the results of the equations in a specific way to obtain yet another equation, and finally determining, plotting, and displaying information based on the solution to the latter equation. Thus, instead of being drawn to a principle in the abstract, the limitations of Applicant's amended claims involve the natural phenomenon of mammalian brain waves. The steps of the claims recite the practical application of this natural phenomenon by measuring and manipulating and recording this phenomenon, before finally displaying the results of this manipulated data in order to solve the stated solution of assessing brain state. Finally, Applicant's specific equations in the recited method steps impose meaningful limitations on the applications of the steps. Therefore, based upon the foregoing, because Applicant's amended claims 1, 3, 4 and 7 represent patentable subject matter, Applicant respectfully requests withdrawal of the present 35 U.S.C. § 101 rejection, including with respect to all remaining claims dependent upon amended claims 1, 3, 4 and 7.

**The Rejection of Claims 24 & 26 under 35 U.S.C. § 101:**

Claims 24 and 26 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter on the basis that the claims are not directed to either a process nor machine but instead overlap two different statutory classes of invention. Applicant has amended the form of claims 24 and 26 to recite limitations that do not attempt to claim both an apparatus and method/method of use, but instead recite only method steps performed by any claimed machine or apparatus, and accordingly requests that the rejection be withdrawn.

**CONCLUSION**

Based upon the above, Applicant asserts that claims 1, 3 – 17, 24, 26 and 27 – 32 are in a condition for allowance and respectfully requests the same.

If any issues remain that may be expeditiously addressed in a telephone interview, the Examiner is encouraged to telephone the undersigned at 515/558-0200.

All fees or extensions of time believed to be due in connection with this response are attached hereto; however, consider this a request for any extension inadvertently omitted, and charge any additional fees to Deposit Account 50-2098.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'T. Zarley', with a stylized flourish extending to the left.

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